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10/631,903	07/31/2003	John A. Barinaga	200208479-1	9636

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EXAMINER

HSIEH, SHIH WEN

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,903

Applicant(s)

BARINAGA ET AL.

Examiner

Shih-wen Hsieh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17, 37-41 and 51-53 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 18-25, 27-32, 35, 42-47 and 50 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 26, 33, 34, 36, 48 and 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-31-03
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 42 is objected to because of the following informalities:

Line 6, please add “,” at the end of this line.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3, 7, 21-23, 42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,585,347 B1 ('347). Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with printing drum, a print head and a service station used to service the head, and a table of claims comparison

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between these two cases below indicates the obviousness of the instant application over patent ('347):

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1 . A method for servicing a print head, the method comprising: moving the print head along a path away from a printing position adjacent a drum rotatable about a rotation axis to a service position away from the drum, said path orthogonal to said rotation axis; conducting a service operation on the print head at the service position; moving the print head back to the printing position to reposition the print head adjacent the drum.

2. The method of claim 1, wherein said moving the print head away from the printing position comprises: moving the print head in a rotational path.

3. The method of claim 1, wherein said moving the print head away from the printing position comprises: moving the print head along a linear path.

7. A method for servicing a print head, the method comprising: moving the print head along an **arc-shaped path** away from a printing position adjacent a drum rotatable about a rotation axis to a service position away from the drum; conducting a service operation on the print head at the service position; moving the print head back to the printing position to reposition the print head adjacent the drum.

21. A method for servicing a plurality of print bars, the method comprising: moving the plurality of print bars along a path away from a printing position to a service position away from the

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1. A method of servicing inkjet print heads which are mounted on a carriage, comprising: providing a print zone for supporting media; holding the carriage in a stationary position over the print zone while the inkjet print heads apply ink to media in the print zone; providing a service station located away from the print zone, and mounting a plurality of different service modules on the station; causing the carriage and the service station to move relative to each other in different linear directions in order for the carriage to reach a servicing position, including moving the carriage independently of the service station to the servicing position such that the print heads are in adjacent aligned relationship with one of the different service modules; and causing servicing interaction to occur between the one service module and at least one of the print heads.

<p>surface of a drum, each print bar having a page wide array of print heads thereon; conducting a service operation on the plurality of print bars at the service position; moving the plurality of print bars along the path back to the printing position to accurately reposition the print bars for printing operations.</p> <p>22. The method of Claim 21, wherein said moving the plurality of print bars away from the printing position comprises: moving the plurality of print bars in a rotational path.</p> <p>23. The method of Claim 21, wherein said moving the plurality of print bars away from the printing position comprises: moving the plurality of print bars along a linear path.</p> <p>42. A drum printer, comprising: a rotatable drum having a print medium supporting surface and mounted for rotation about an axis; a print bar having an array of fluid ejecting nozzles mounted thereon; print bar support means for supporting the print bar at a print position adjacent the surface at a printing position and at a service position; means for moving the print bar support means along a path orthogonal to said axis, between the printing position and the service position.</p>	
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Same:

From the table above, the print head, the printing position/print zone, the service station at a service position are the same for both cases.

Different:

1) Instant application specifically recites a rotatable drum for supporting a printing medium, while patent ('347) does not.

However, a support for supporting a printing medium, or generally the so-called a platen can be either in a form of a platform, a drum, a roller or a conveyor belt.

Therefore it would have been an obvious matter that the drum used in the instant application is only specifically mentioned to what type of a platen being used.

2) Instant application has a rotational path as recited in claim 2 or an arc-path as recited in claim 7, while patent ('347) does not have.

The relative movement between the print head and the service station is in a linear or rotation path/arc-path is only a way to bring these two devices together so as to allow the service station to service the head, both type of movements (linear or curved) are well known in the art, refer to MPEP 2144.04, In re Malcolm 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore it would have been an obvious matter that by using a linear motion or a rotational motion/arc-path type of motion to bring the head engaging with the service station will achieve a same result, i.e., engaging these two device to let the service station services the head.

3) Claim 21 of the instant application recites "page width array (PWA, some prior art refer to as Full Width Array (FWA)".

A PWA or FWA is just another of print head, in a printing operation, this type of head is generally stays stationary in contrary to the reciprocal one, refer to MPEP 2144.04, In re Malcolm 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore it would have been an obvious matter that the print heads recited in patent ('347) could be a PWA type.

4) Claim 42 is an apparatus claim. It is known that a method step in a method claim will have to be supported by the structures of an corresponding apparatus claim. Or the apparatus specifies the hardwares/subject matters, while the method claim specifies of how to use such hardwares/subject matters in a step-by-step way. Therefore, claim 42 is also rejected under this double patenting title.

4. Claims 4 and 24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,585,347 B1 ('347). Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with the types of servicing functions. Below is a table of claims comparison to indicate their obviousness:

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4. The method of Claim 1, wherein said conducting said service comprises any of wiping, capping, spitting or drop detection operation functions. 24. The method of Claim 21, wherein said conducting said service comprises any of wiping, capping, spitting or drop detection operation functions.	2. The method of claim 1 wherein said causing servicing interaction includes a servicing activity taken from the following: wiping, spitting, scraping, capping, applying cleaning fluid, priming.

All of those servicing functions indicated above in the two claims are well-known in the art.

5. Claims 5 and 25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,585,347 B1 ('347). Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deals with how a service station approaches the head. Below a table of claims comparison to indicate their obviousness:

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<p>5. The method of Claim 1, wherein said conducting said service operation comprises: moving a service station from a rest position to a servicing position adjacent the print head.</p> <p>25. The method of Claim 21, wherein said conducting said service operation comprises: moving a service station from a rest position to a servicing position adjacent the plurality of print bars.</p>	<p>3. The method of claim 1 which includes advancing media through the print zone in a direction identified as a Y axis, and moving the carriage to a servicing position in another direction identified as an X axis substantially normal to the Y axis, and wherein said causing servicing interaction includes capping at least one of the print heads in a different direction identified as a Z axis which is substantially normal to both the Y axis and the X axis.</p>

What recited in claims 5 and 25 of the instant application is actually the Z-direction in claim 3 of patent ('347).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 18-20, 27-32, 35, 43-47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US Pat. No. 5,534,897).

In regard to:

Claim 18:

Anderson et al. teach:

A printer (10, fig. 1), comprising:

a paper transport (18, fig. 1) having a print medium supporting surface (not numbered, however, e.g., a conveyor belt);

a print head (14, fig. 1) disposed adjacent the supporting surface, the print head mounted on a print bar support structure (12, fig. 1), refer to col. 3, lines 39-42; and

an actuator (not numbered) for moving the print bar support structure along an arc-shaped path between a printing position and a service position, refer to figs. 1-3; col. 3, lines 39-42 (the pivoting action of the printbar frame 12 about a pivot axis 30 is done actually by a mover or the actuator as the instant application called, only such mover is not explicitly expressed in Anderson et al.'s invention).

The device of Anderson et al. DIFFERS from claim 18 in that it does not teach a rotatable drum for supporting the printing medium.

As discussed above, the device for supporting a printing medium, or the so-called platen is able to assume a number of types, a rotatable drum is only one of the types.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Anderson et al. to use a rotatable drum instead the paper transport as used in the Anderson et al.'s invention for the purpose of the rotatable drum is actually occupies less space than the paper transport, because the paper transport has two pulleys stretch apart with a conveyor belt wrapped around the pulleys, while the drum is just one piece. However, both types conveys printing medium.

Claim 19:

Anderson et al. further teach:

wherein said print bar frame structure is pivotable for rotational movement about a pivot axis (30, fig. 1), refer to col. 3, lines 39-42.

Claim 20:

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wherein said pivot axis is parallel to said rotation axis.

Rejection:

From fig. 1 of Anderson et al., the rotational axis of paper transport (18) is parallel to the pivot axis (30). Therefore, the as modified Anderson et al. device having a rotatable drum will have the same orientation as that shown in fig. 1 of Anderson et al.'s invention, this means the rotational axis of the as modified Anderson et al.'s drum is in parallel to the pivoting axis.

Claim 27:

A drum printer, comprising:

a rotatable drum having a print medium supporting surface;

a plurality of print bars disposed adjacent the supporting surface, the print bars mounted on a print bar support structure;

an actuator for moving the print bar support structure along a path between a printing position and a service position.

Rejection:

This claim is rejected on the basis as set forth for claim 18 discussed above.

Claim 28:

wherein each print bar comprises a page wide array of print heads.

Rejection:

This claim is rejected on the basis as set forth for claim 21 discussed above.

Claim 29:

Anderson et al. further teach:

wherein each print bar comprises an inkjet print head comprising an array of fluid ejecting nozzles, refer to the title for the ink jet, and head contains an array of fluid ejecting nozzles is the feature of the ink jet head, and is obvious to an in jet head.

Claim 30:

wherein the print head nozzle array is positioned adjacent to the surface of the drum in the printing position to provide high print quality of the printed output.

Rejection:

The feature recited in this claim in an ink jet printer is called a gap (between the head and the printing medium, which is supported on the platen, which can be in a form of rotatable drum), the ejected ink droplet travels through the gap landed onto the medium forming an image.

Claim 31:

Anderson et al. further teach:

wherein said print bar frame structure (12, fig. 1) is pivoted for rotational movement about a pivot axis (30, fig. 1) , and said path is an arc (refer to fig. 3, the curved double-headed arrow).

Claim 32:

wherein said pivot axis is parallel to an axis of rotation of said drum.

Rejection:

This claim is rejected on the basis as set forth for claim 20 discussed above.

Claim 35:

Anderson et al. further teach:

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a service station (16, figs. 1-5) for performing service functions on the print bars at the service position, refer to col. 3, line 34.

Claim 43:

wherein said array is a page wide array of print heads.

Rejection:

This claim is rejected on the basis as set forth for claim 28 discussed above.

Claim 44:

wherein the print bar comprises an inkjet print head comprising an array of fluid ejecting nozzles.

Rejection:

This claim is rejected on the basis as set forth for claim 29 discussed above.

Claim 45:

wherein the print head nozzle array is positioned adjacent to the surface of the drum in the printing position to provide high print quality of the printed output.

Rejection:

This claim is rejected on the basis as set forth for claim 30 discussed above.

Claim 46:

wherein said print bar support means is pivoted for rotational movement about a pivot axis, and said path is an arc.

Rejection:

This claim is rejected on the basis as set forth for claim 31 discussed above.

Claim 47:

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wherein said pivot axis is parallel to an axis of rotation of said drum.

Rejection:

This claim is rejected on the basis as set forth for claim 32 discussed above.

Claim 50:

a service station for performing service functions on the print bars at the service position.

Rejection:

This claim is rejected on the basis as set forth for claim 35 discussed above.

Allowable Subject Matter

8. Claims 9-17, 37-41 and 51-53 are allowed.

9. Claims 6, 8, 26, 33, 34, 36, 48 and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

In regard to:

Claims 6, 8 and 26:

The primary reason for the allowance of claims 6, 8 and 26 is the inclusion of the step of moving the print head along the path back to the printing position includes engaging a fixed registration surface with a datum to accurately position the print head at the printing position. It is this step found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Claims 9-17:

The primary reason for the allowance of claims 9-17 is the inclusion of the limitation of an actuator for moving the print bar support structure along a path orthogonal to said rotation axis between a printing position and a service position. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claim allowable over the prior art.

Claims 33 and 48:

The primary reason for the allowance of claims 33 and 48 is the inclusion of the limitation of wherein said path is a linear path. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claim allowable over the prior art.

Claims 34 and 49:

The primary reason for the allowance of claims 34 and 49 is the inclusion of the limitation of a plurality of datums (claim 34)/datum means (claim 49) to accurately

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registering the frame structure at the printing position. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claim allowable over the prior art.

Claim 36:

The primary reason for the allowance of claim is the inclusion of the limitation of wherein said path is orthogonal to an axis of rotation of said drum. It is this limitation found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 37-41:

The primary reason for the allowance of claims 37-41 is the inclusion of the limitations of the first set mounted on a first print bar support structure for movement along a first linear constrained path; the second set mounted on a second print bar support structure for movement along a second linear constrained path; a first actuator for moving the first print bar support structure along said first constrained path between a first set printing position and a first set service position; a second actuator for moving the second print bar support structure along said second constrained path between a second set printing position and a second set service position. It is these limitations found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 51-53:

The primary reason for the allowance of claims 51-53 is the inclusion of the method steps of moving a first set of the print bars in a first direction away from a first printing position to a first service position away from the surface of a drum, moving a second set of the print bars in a second direction which is opposite to said first direction, from a second printing position to a second service position. It is these steps found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
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SWH



Dec. 8, 2004